Amendments To The Claims:

This following Listing of Claims will replace all prior versions and listings of claims in the application. Claims 1-28 are canceled. Independent claims 29 and 40 are allowable claims 9 and 23 rewritten into independent form, and including any respective intervening claims. No new matter has been added.

Listing of Claims:

Claims 1-28 (Canceled)

29. (New) A method of controlling connection of a supply of AC power to a load and to a power supply grid, the supply of AC power being generated by an AC power generating system of the kind that comprises a source of power arranged to provide an electrical output, a converter which generates an AC power output to supply the load from the electrical output, and a control unit operable to control the operation of the converter and thereby to supply the power required to the load both when the AC power output of the AC power generating system is connected to the power supply grid, as well as to the load and during independent operation of the AC power generating system to supply the load including in the event of disconnection of the AC power output from the power supply grid, the control unit being operable in response to signals derived from sensed current and/or voltage of an electrical output which is generated by the converter from the electrical output of the source of power, wherein the current and voltage of the AC power output and the voltage of the power supply grid are monitored, and one reference which is derived from the monitored AC power output voltage and which is used as a reference in the operation of the converter to control the generation of the AC power output during independent operation of the AC power generating system to supply the load is replaced by another reference which is derived from the monitored grid voltage when the AC power output is to be connected to the power supply grid such that generation of the AC power output by the converter of the AC power generating system is controlled in accordance with the other reference that is derived from the monitored grid voltage when the AC power output of the AC power generating system is connected to the power supply grid as well as supplying the power required by the load, so that the

voltage of the AC power output is changed to correspond to the grid voltage in phase and frequency,

the method including the steps of:

comparing one output signal produced by a voltage reference generator with the monitored AC power output voltage in a voltage controller which responds by producing said one reference;

deriving a voltage reference signal from the monitored grid voltage, feeding that voltage reference signal to said voltage reference generator, operating said voltage reference generator to modify said one output signal so as to change its phase and amplitude progressively towards those of said voltage reference signal, and delaying connection of said AC power output to the grid until after said one reference and said voltage reference signal are substantially overlapping in phase and amplitude; and

feeding said voltage reference signal to said voltage controller instead of said one output signal, and operating said voltage controller to compare said voltage reference signal with said monitored AC output voltage to produce said one reference once said one reference signal and said voltage reference signal are substantially overlapping in phase and amplitude.

30. (New) A method of controlling connection of a supply of AC power to a load and to a power supply grid according to claim 29 wherein, in the event of disconnection of the AC power output from the power supply grid or of loss of the grid voltage, said other reference is replaced by said one reference with which it is substantially overlapping in phase and amplitude so that said AC power generating system operates independently and continues substantially without interruption to supply the power required by the load.

31. (New) A method of controlling connection of a supply of AC power to a load and to a power supply grid according to claim 29, wherein the source of power is controllable and provides a variable voltage and/or current electrical output, the AC power output generated by the converter for supply to the load being substantially independent of variations in the electrical output of the controllable source and said control unit being operable to control the operation of said controllable source as well as the operation of

said converter.

32. (New) A method of controlling connection of a supply of AC power to a load and to a power supply grid according to claim 31, including controlling the operation of said controllable source by said control unit in response to the monitored current and voltage of the AC power output when the AC power output is connected to the power supply grid so that active and reactive power that are transmitted to the power supply grid are adjusted and controlled in accordance with the voltage of the grid.

33. (New) A method of controlling connection of a supply of AC power to a load and to a power supply grid according to claim 29, wherein the AC power output current for each phase is monitored between the inductor and the capacitor of an LC filter for that phase.

34. (New) A method of controlling connection of a supply of AC power to a load and to a power supply grid according to claim 29, wherein said voltage reference signal is derived from said monitored grid voltage by feeding said monitored grid voltage to an input of a phase lock loop, said voltage reference signal being the output of said phase lock loop.

35. (New) A method of controlling connection of a supply of AC power to a load and to a power supply grid according to claim 29. wherein said one reference is replaced by said other reference after said one output signal has been replaced by said voltage reference signal.

36. (New) A method of controlling connection of a supply of AC power to a load and to a power supply grid according to claim 29 including deriving said other reference from said voltage reference signal.

37. (New) A method of controlling connection of a supply of AC power to a load and to a power supply grid according to claim 36, wherein said other reference is also derived

from an active power reference and a reactive power reference.

38. (New) A method of controlling connection of a supply of AC power to a load and to a power supply grid according to claim 29, wherein said other reference is also derived from said monitored AC power output active current.

39. (New) A method of controlling connection of a supply of AC power to a load and to a power supply grid according to claim 35, including reconnecting said one output signal to said voltage controller and replacing said other reference by said one reference in the event of disconnection of the AC power output from the power supply grid or loss of the grid voltage.

40.(New) A system which controls connection of a supply of AC power to a load and to a power supply grid, the supply of AC power being generated by an AC power generating system of the kind that comprises a source of power arranged to provide an electrical output, a converter for generating an AC power output to supply the load from the electrical output, and a control unit operable to control the operation of the converter and thereby to supply the power required to the load both when the AC power output of the AC power generating system is connected to the power supply grid as well as to the load and during independent operation of the AC power generating system to supply the load including in the event of disconnection of the AC power output from the power supply grid, the control unit being operable in response to signals derived from sensed current and/or voltage of an electrical output which is generated by the converter from the electrical output of the source of power, the system being operable to monitor the current and voltage of the AC power output and the voltage of the power supply grid, to derive one reference from the monitored AC power output voltage, said one reference being for use as a reference in the operation of the converter to control the generation of that AC power output during independent operation of the AC power generating system to supply the load, and to derive another reference from the monitored grid voltage, said control unit being operable to replace said one reference by the other reference which is derived from the monitored grid voltage when the AC power output is connected to the power

supply grid such that generation of the AC power output by the converter of the AC power generating system is controlled in accordance with the other reference that is derived from the monitored grid voltage when the AC power output of the AC power generating system is connected to the power supply grid as well as supplying the power required by the load so that the voltage of the AC power output is changed to correspond to the grid voltage in phase and frequency,

the system including voltage reference generator means which are operable to produce one output signal and a voltage controller which is operable to compare the monitored AC power output voltage with said one output signal and thereby to produce said one reference;

wherein a voltage reference signal which is derived from the monitored grid voltage is fed to said voltage reference generator, said voltage reference generator being operable to modify said one output signal so as to change its phase and amplitude progressively towards those of said voltage reference signal, connection of said AC power output to the grid being delayed until after said one reference and said voltage reference signal are substantially overlapping in phase and amplitude,

wherein the system further includes first a transfer switch operable once said one reference signal and said voltage reference signal are substantially overlapping in phase and amplitude, so that said voltage reference signal is fed to said voltage controller instead of said one output signal for comparison with said monitored AC output voltage to produce said one reference.

41. (New) A system which controls connection of a supply of AC power to a load and to a power supply grid according to claim 40, wherein said control unit is operable to replace said other reference by said one reference with which said other reference is overlapping in phase and amplitude so that said AC power generating system operates independently and continues substantially without interruption to supply the power required by the load.

42. (New) A system which controls connection of a supply of AC power to a load and to a power supply grid according to claim 40, wherein the source of power is

controllable and provides a variable voltage and/or current electrical output, the AC power output generated by the converter for supply to the load being substantially independent of variations in the electrical output of the controllable source and said control unit being operable to control the operation of said controllable source as well as the operation of said converter.

43. (New) A system which controls connection of a supply of AC power to a load and to a power supply grid according to claim 40, wherein said control unit that is operable to control the operation of the controllable source is responsive to the monitored current and voltage of the AC power output when the AC power output is connected to the power supply grid so that active and reactive power that are transmitted to the power supply grid are adjusted and controlled in accordance with the voltage of the grid.

44. (New) A system which controls connection of a supply of AC power to a load and to a power supply grid according to claim 40, wherein the AC power output current for the each phase of the AC power output is monitored between the inductor and capacitor of an LC filter for that phase.

45. (New) A system which controls connection of a supply of AC power to a load and to a power supply grid according to claim 40, including a phase lock loop having an input and an output, wherein said monitored grid voltage is fed to the input of the phase lock loop and said voltage reference signal is emitted from the output of said phase lock loop.

46. (New) A system which controls connection of a supply of AC power to a load and to a power supply grid according to claim 40, including a second transfer switch operable once said one output signal has been replaced by said voltage reference signal, so that said one reference is replaced by said other reference.

47. (New) A system which controls connection of a supply of AC power to a load and to a power supply grid according to claim 40, wherein said other reference is derived

from said voltage reference signal.

48. (New) A system which controls connection of a supply of AC power to a load and to a power supply grid according to claim 47, wherein said other reference is also derived from an active power reference and a reactive power reference.

49. (New) A system which controls connection of a supply of AC power to a load and to a power supply grid according to claim 40, wherein said other reference is also derived from said monitored AC power output active current.

50. (New) A system which controls connection of a supply of AC power to a load and to a power supply grid according to claim 46, wherein, the first and second transfer switches are operable to reconnect said one output signal to said voltage controller and to replace said other reference by said one reference so that said power supply apparatus operates independently in the event of disconnection of the AC power output of the AC power generating system from the power supply grid or of loss of grid voltage.